

secretaries, with the "half-fifth" rank. The sons of officers of the "half-second" rank become under-assistants, with "full-sixth" rank. The sons of officers of the third rank obtain the honorary degree of bachelor of arts, carrying the seventh rank. The sons of deceased officers of lower grades inherit no rank.

THE thirty-ninth anniversary meeting of the Royal Botanic Society was held in the Gardens, Regent's Park, on Saturday, Mr. James Heywood, F.R.S., in the chair. The annual reports of the council, auditors, and secretary were read. From these reports it appears that the affairs of the society are in a satisfactory state; the receipts in each of the several items had exceeded those of 1877, the balance being some 600*l.* better. The number of new Fellows elected was 112. Four hundred and eighty-one free students' orders for terms of two to six months each had been issued, including sixty-three to artists. The number of cut specimens given to students, professors, and teachers at the several medical and other schools was 63,414—an increase of 20,000 over last year, and 40,000 more than in 1871. The usual exchange of plants and seeds has been maintained with vigour; valuable contributions to the Society's collections were received from correspondents, including the Botanic Gardens of South Australia, Mauritius, Dublin, &c., and also from the Royal Gardens, Kew.

THE additions to the Zoological Society's Gardens during the past week include two European Lynx (*Felis lynx*) from Norway, presented by Major Chadwick; a Hobby (*Hypotriorchis subuteo*), British Isles, presented by Mr. Howel Scratton; a Solitary Thrush (*Monticola cyanea*), European, presented by Mr. W. Verner; a Common Marmoset (*Hapale jacchus*), a Weeper Capuchin (*Cebus capucinus*), three Bluish Finches (*Spermophila cerulescens*) from Brazil, a Coati (*Nasua nasica*), a Common Boa (*Boa constrictor*), a Common Teguxin (*Teius teguxin*) from South America, a Red and Blue Macaw (*Ara macao*) from Central America, deposited; a Black-footed Penguin (*Spheniscus demersus*) from South Africa, two Common Kingfishers (*Alcedo ispida*), British Isles, purchased; a Wapiti Deer (*Cervus canadensis*), born in the Gardens; a Black-crested Cardinal (*Gubernatrix cristatella*), two Talpacoti Ground Doves (*Chamaepelia talpacoti*), bred in the Gardens.

THE NORWEGIAN NORTH ATLANTIC EXPEDITION

THE Expedition left Hammerfest on July 13 on its trip westwards. The depths sounded on the following days were not great, the greatest being 1,440 fathoms in 72° 16' N. lat. and 8° 9' E. long. On the 17th, late in the evening, we unexpectedly met the ice of the Greenland Arctic current, in 73° 16' N. lat. and 3° 22' W. long., and were obliged to turn eastwards and northwards. Our next cross section commenced in 75° 16' N. lat. and 0° 54' W. long., and went along the 75th parallel to a point north-east of Bear Island. On the westernmost point we had a depth of 1,985 fathoms, but later only smaller depths. The bank west of Bear Island lies much more easterly and nearer this island than shown in the charts, there being a depth of 1,100 fathoms in the place where the French Expedition with *La Recherche* in 1839 gives 259 fathoms. The weather was in the beginning favourable, but under the ice we had strong northerly winds with a temperature of 2° C. and a heavy swell from the south-east. Having passed the meridian of Bear Island the temperature of the water fell to 0.2° C. on the Spitzbergen Bank. From our last sounding and dredging station north-east of Bear Island we sailed down to the east side of the island and stopped outside the south-east side, but the heavy wind and sea did not allow us to go on shore. With the glass we saw distinctly the Russian

hut and its environs, but were not able to see our flag, which we had planted by the Dutch port, nor any column or cairn which could show us that the Dutchmen had been there. At 10 P.M. on July 23 we made sail for Norway, and with a fair but rather heavy gale and storm the *Vöringen* went on, heavily rolling, till we, twenty-four hours afterwards, made the Norwegian coast in thick rainy weather. At 4 A.M. on the 24th we dropped our anchor in Hammerfest.

Our soundings show that there is a sort of ridge 1,200–1,300 fathoms deep, between Bear Island and Jan Mayen. The trawl has brought up from the ice-cold water in these depths many rare and several new fishes, particularly of the genus *Lycodes*. A good many other new animals have been secured by our zoologists. The line of 0° C. lies in our last two cross-sections still at a depth of 500 fathoms. In the eastern part of our sea, the boundary line of the polar current, where 0° is to be found is less than 30 fathoms, and the surface water is less than 5°, lies in lat. 72½° N., long. 6° E., and in lat. 75° N., long. 7½° E. North and east of Bear Island the ice-cold Spitzbergen current runs southward over a very shallow bottom, the depths being only some 20 fathoms. The border of the Greenland Arctic current shows the same phenomenon as that observed in our northern fjords, viz., a minimum of temperature in, say, 40 fathoms depth, a second maximum about 0° C. in, say, 100 fathoms, and the absolute minimum of – 1.4° at the sea bottom.

We are now fitting out for our last trip, to the sea west of Spitzbergen, and expect to be ready to sail on the 30th.

At this moment we have news from the Dutch expedition, whose commander has left a letter, sent us from Vardö. He tells us that they made Jan Mayen on the east side but were not able to land in the heavy sea. From Jan Mayen they proceeded along the edge of the ice to Hackluyt's Headland, North Spitzbergen, which they reached on June 19. North of Spitzbergen they spent some fourteen days, and went as far east as to the Verlegin Hook. Thence they sailed southwards, called at Kobbe Bay, and found our mail at Bear Island, but were obliged to leave that place in a hurry, the wind being rather strong. Their letters home have probably been taken by a Norwegian fisherman off Vardö. Prof. Nordenskjöld passed the North Cape some days ago.

Hammerfest, July 27

H. MOHN

THE ECLIPSE OF THE SUN

ON another page we print an article, just received from Mr. Lockyer, on the recent eclipse, which, from its title and date, it will be seen was written before the event. The following telegrams from the *New York Tribune* of July 31 will perhaps enable our readers, in the meantime, to form a more complete idea of the results achieved.

A telegram to the *Tribune* from Lebanon, Mo., July 30, states that the Fort Worth party of observers, consisting of L. Waldo and R. W. Willson, of Harvard University, Prof. J. K. Ries and W. H. Pulsifer, of St. Louis, and Mr. F. E. Seagrave, of Providence, R. I., had fine weather for their observations, and met with general success. The four contacts were observed both with and without spectroscopes. The reversion of the spectral lines at totality, and the corona and its spectrum were studied, and five photographs, two of them polariscopic, were secured during totality. A number of sketches by local observers, for extent and form of corona, were made. The observers stationed by this party at McKinney, Allen, Cleburne, Waco and Dallas, were also generally successful in observing the duration of totality.

The following official telegrams were received at the U.S. Naval Observatory from the Naval Professors who were in charge of parties sent out to observe the eclipse:—

"Las Junta, Col., July 29.

"Good observations of the eclipse at Las Junta. Complete set of photographs. "ASAPH HALL"

"Creton, W.T., July 29

"Sky cloudless and observations perfectly successful. Six photographs of corona. Four polariscope photographs of corona and a fine drawing obtained. No ultra violet spectrum visible during totality.

"W. HARKNESS"

"Central City, Col., July 29

"Whole eclipse perfectly observed. I find no Vulcan as large as sixth magnitude. Hastings finds consistent tangential polarisation. Drawings and photographs of corona. Diffraction shade bands observed.

"E. J. HOLDEN"

"Separation, W.T., July 29

"Observations here very successful. Saw wings of light, supposed to be zodiacal light, extending 6° on each side of the moon in the direction of the ecliptic. Commander Sampson, U.S.N., found no dark lines in continuous spectrum of corona. Line 1,474 seen near sun's limb. No bright lines visible a few seconds after totality.

"S. NEWCOMB"

"Pike's Peak, Col., July 29

"Fair weather after a week's storm. Observations successful in a marvellously clear sky. Corona resembling zodiacal light followed in one direction twelve diameters from the sun.

"S. P. LANGLEY."

"Eclipse successfully observed at Dallas, Texas. All four contacts satisfactory. No inter-Mercurial planet seen with comet-seeker. Thin clouds. No stars seen near the sun. Corona very brilliant. Several drawings secured and photographs taken.

"D. P. TODD"

It is telegraphed to the *Tribune* from—

"Havana, July 30.—Yesterday the total eclipse of the sun was visible in this latitude. The sky was perfectly clear, and complete observations were made. A report of the results obtained was expected to-day, but the scientific commission which took observations at Mariel, where the meridian passes, has not returned yet."

"Quebec, July 30.—The eclipse of the sun yesterday was witnessed under the most favourable circumstances."

"Washington, July 30.—The Signal Service Observer at Virginia City, Mont., reports to the Chief Signal Officer as follows:—"Our four telescopic stations have got all the contacts nicely, and three sketches of the corona."

OUR ASTRONOMICAL COLUMN

THE SATURNIAN SATELLITE HYPERION.—The following ephemeris of Hyperion is deduced from the elements which were calculated by Prof. Asaph Hall, upon his observations in 1875 with the Washington 26-inch refractor.

AT GREENWICH MIDNIGHT.

| Position. | Distance. | | Position. | Distance. |
|-------------------------|-----------|------------------------|-----------|-----------|
| Aug. 24 ... 268 ... 147 | | Sept. 4 ... 89 ... 125 | | |
| " 25 ... 263 ... 93 | | " 5 ... 82 ... 53 | | |
| " 26 ... 243 ... 37 | | " 6 ... 301 ... 30 | | |
| " 27 ... 125 ... 36 | | " 7 ... 281 ... 99 | | |
| " 28 ... 105 ... 93 | | " 8 ... 277 ... 167 | | |
| " 29 ... 100 ... 146 | | " 9 ... 276 ... 213 | | |
| " 30 ... 97 ... 189 | | " 10 ... 274 ... 239 | | |
| " 31 ... 96 ... 218 | | " 11 ... 273 ... 244 | | |
| Sept. 1 ... 94 ... 228 | | " 12 ... 272 ... 231 | | |
| " 2 ... 93 ... 216 | | " 13 ... 271 ... 201 | | |
| " 3 ... 92 ... 181 | | " 14 ... 269 ... 158 | | |

The plane of the orbit of the satellite is assumed to coincide with that of the ring, and as the earth has passed through the plane since the period included by the

ephemerides which appeared in this column last year, the apparent motion of the satellite is now reversed, or the angles of position diminish. The above ephemeris includes an entire revolution of the satellite, and will serve, if necessary, to afford an idea of its position at any time during the present opposition, remarking that the satellite will be at its peri-saturnium at the following times: August 15^h 09^m 39^s, September 5^h 40^m 52^s, September 26^h 71^m 65^s, October 18^h 02^m 78^s, and November 8^h 33^m 91^s.

OLBERS' STAR NEAR γ PEGASI.—On September 27, 1820, Olbers remarked a star of 6.7 m. not entered upon Harding's map, and which Harding had not seen during two comparisons of it with the heavens. It was somewhat brighter than 39 and nearly equal to 40 Piscium. Olbers accounted for it not having been observed on the meridian by the fact of its culminating within a few seconds of γ Pegasi. He watched it during the remainder of the season without noticing any change in brightness, and it was from the circumstance of his attention being thus directed to this quarter of the sky that he made an independent discovery of the comet of 1821. The star is in the *Durchmusterung* as 7.5 m., and was observed once by Argelander (October 24, 1861), the resulting position for 1855.0 being R.A. oh. 5m. 41^s 8s., N.P.D. 73° 52' 56". Bessel did not observe it, but it is suspicious that he has a star 9m. only, preceding Argelander's position of Olbers' star 7.0s. and 3' 58" to the north, where the *Durchmusterung* has no star. It is a case for some one of those observers who are occupied with the variable stars to explain.

LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.]

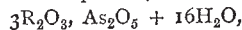
[The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to ensure the appearance even of communications containing interesting and novel facts.]

A New Mineral

MR. BARNETT, of Chyandour, near Penzance, sent to the British Museum some time ago a mineral which appears to be new.

It is white with a slight tint of blue or greenish blue, and occurs as a layer sometimes of a quarter of an inch thickness, generally of a uniform fibrous structure, lining hollows or encasing quartz and other minerals. It is associated with earthy chlorite and quartz; iron pyrites, some copper pyrites, and mispickel being disseminated in the lode-material. Scorodite in boss-like aggregations also occurs with it, and in at least one instance the interior of the bosses of scorodite is filled with the mineral in question.

Dr. Flight has analysed it, and, though the mode in which the water is present has to be established more certainly, the general result of the analysis may be stated to be the assigning to the mineral a formula expressed, in "old style," as



R_2O_3 representing alumina with a notable amount of ferric oxide. The tint seems due to about one per cent. of copper, and a small amount of a sulphate is also present. The presence of the sulphate and general character of the composition would lead one to place the mineral with Pitticite, or "iron-sinter." But the formula, as Dr. Flight has pointed out, is so nearly that of an arsenical (instead of a phosphatic) Evansite that the true place of the mineral seems to be near the Evansite of David Forbes. I propose to call it Liskeardite, and to describe it more precisely hereafter.

N. S. MASKELYNE

British Museum, Mineral Department,

August 12

The Colouring of Birds' Eggs

WITHIN the last few months several notices have appeared in both England and Germany of supposed newly-discovered